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as those of the *Small Pox* in the *Distinct Sort* use to do.

12. The Patient gets abroad quickly, and is most sensibly *Stronger*, and in *better Health* than he was before. The Transplantation has been given to *Women in Child-bed*, Eight or Nine Days after their Delivery; and they have got earlier out of their Child-bed, and in better Circumstances, than ever in their Lives. Those that have had ugly *Ulcers* long running upon them, have had them healed on, and by this *Transplantation*. Some very feeble, crazy, *Consumptive* People, have upon this *Transplantation*, grown hearty and got rid of their former Maladies.

13. The *Sores* of the *Incision* do seem to dry a little in Three or Four Days of the Feverish Preparation for *Eruption*. After this there is a *plentiful Discharge* at them. The discharge may continue a little while after the Patient is quite well on other Accounts; But the *Sores* will soon enough dry up of themselves; but the *later, the better*, as we think. If they happen to be *inflamed*, or otherwise *Troublesome*, we presently help them in the ways we do any *Ordinary Sores*.

VII. *A Letter from Dr. Nettleton, Physician at Halifax in Yorkshire, to Dr. Whitaker, concerning the Inoculation of the Small Pox.*

S I R,

HAVING too often found with no small Grief and Trouble, how little the Assistance of Art cou'd avail in many Cases of the *Small Pox*, I was induced to try the Method of Infition or Inoculation, which came so well recommended by several Physicians

cians from *Turkey*, and which had also been lately practised in *London*. This I thought was sufficient to justify the Attempt, and what success it has met with, I have here sent, according to your desire, a faithful Account of, and of every Thing that has been done or observed here, relating to that Affair, which might be worth your Notice.

It was in *December* last, That I first began to put this Method in Practice, and finding it to succeed beyond my Expectation in the first instance, I was encouraged to repeat it upon some others, and afterwards several, seeing with how much ease these got thro' the Distemper, were desirous to have the same done to themselves or their Children; so that there are now upwards of Forty here, who have received the *Small Pox* by Insition; who are all got well thro' the Distemper, and are at this time thro' Gods Blessing in very good Health. Only one that was inoculated, did Die; of which I shall give you a particular Relation hereafter, and refer it to your Impartial Judgment, whether that ought to cast any Blemish upon the Operation or no.

What was done by way of Preparation was chiefly purging with Rhubarb for Children, and sometimes Vomiting or Bleeding for grown Persons; and many have had no Preparation at all. But I always found, as far as I was able to judge, That those, whose Bodies were well prepared by such proper Methods as their different Ages or Constitutions did seem to require, had more favourable Symptoms than others in like Circumstances, where that was omitted.

The Method, which I always took in the Operation, was to make two Incisions, one in the Arm and another in the opposite Leg. It is not material as to raising the Distemper, whether the Incisions be large
or

or small; but I commonly found, that, when they were made pretty large, the quantity of Matter discharged afterwards at those Places was greater; and the more plentiful that Discharge, the more easy the rest of the Symptoms generally are, and they are also by this means the best secured from any inconvenience, which might follow, after the *Small Pox* are gone off.

At first I collected some of the Matter from the Pustules of one, who had the *Small Pox* of the natural Sort, into a shell or Vial, and infused two or three drops of it into the Wound; but finding it to be very troublesome and difficult to get any quantity of the Matter, and observing also, that the least imaginable will be sufficient for the Purpose, I commonly take small Pledgets of Cotton, and ripping the Pustules, when they are ripe, with the point of a Lancet, roll the Pledgets over them, till they have imbibed some of the Moisture. I put one of these upon each Wound, and cover it with any common Plaister till the next Day, when I commonly take away both the Cotton and the Plaister, leaving the Wound to it self, only covering it with a slight linnen Roller, to defend it from the Air. I have sometimes rubb'd the Pledget only once over the Wound, without binding it on, which I found to answer the End as well; and from some other Observations I have made, I have been surprized to see the *Small Pox* produced this way, when I was very well assured, the quantity of Matter received into the Vessels, cou'd not amount to the hundredth part of a Grain.

The Persons inoculated have not been confin'd to any Regimen, but only to be kept moderately warm; and those, who were grown up, to live very temperate and regular, to keep their Minds easy and composed,

and to use proper means to drive away all Fear and Concern. Some have been obliged from the time of the Incision to abstain from Flesh and all strong Liquors; but I found afterwards, that the Eruption did not proceed so well, when they were obliged to live too low. Perhaps in warmer Climates, where they are not so much accustomed to live upon Flesh, such Abstinence may be necessary; but here I find it best to let them eat and drink as usual, tho' something more sparingly, till the Fever begins to rise; and then, but not before, we enjoin such a Regimen as is usual in like Cases.

The first Thing that occur'd after the Incision, was the Inflammation of the Wounds, which commonly happen'd about the fourth Day, when they began to appear very red round about, and to grow a little sore and painful; in about two Days more they began to digest and run. In some they begin to run sooner, and the quantity discharged is much greater than in others. I generally found, that in those who discharged most this way, the Fever was more slight, and the *Small Pox* fewer, tho' I have known some do very well when these places have only appear'd very red, but have scarce run any thing at all, as it usually happens, when the Incision is made so superficial as not to cut thro' the Skin.

About the seventh Day the Symptoms of the Fever begin to come on, which are the very same, that we always observe in the *Small Pox* of the distinct Kind, in the natural way. A quick Pulse, great heat and thirst, pain in the Head and Back and about the region of the Stomach, vomiting, drowsiness, startings, and sometimes Convulsions. All were not seized with all these Symptoms, nor in the same Degree or Continuance; some began on the seventh Day, and
continued

continued ill without any Remission till after the eleventh ; many not till the eighth or ninth Day ; and the Fever in these was more moderate with great Intermissions ; and some have scarce had any illness at all. During all this time the Places of Incision continued to be very sore and swell very much, so as to appear very large and deep, and to discharge a great deal of Matter.

On the tenth Day the *Small Pox* most commonly did appear, sometimes on the ninth, and sometimes not till the eleventh : but I never found that any difference of Age, Constitution, or any other Cause ever made them vary above one Day from the tenth. The Number was very different, in some not above Ten or Twenty, most frequently from Fifty to two Hundred, and some have had more than could well be numbered ; but never of the confluent Sort. Their Appearance was the same with those of the distinct Kind, they commonly came out very round and florid, and many times rose as large as any I have observed of the natural Sort, going off with a yellow Crust or Scab as usual ; tho' it sometimes happens, especially when the Sores discharge a very great quantity of Matter, that they are both few in Number, and do not rise to any Bulk ; but having made their Appearance for Four or Five Days they wast insensibly away.

After the *Small Pox* come out, the Feverish Symptoms gradually abate, and when the Eruption is completed, they usually cease, without any second Fever, or any farther trouble in any respect.

While the Pustules were rising, and for some time after they were gone, the Sores continued to swell and to run very much, the longer they did so the better ; but they never fail'd to heal up of themselves after a certain Time.

I very rarely saw Occasion for any Medicines in the course of the Distemper, only sometimes when the Symptoms ran very high, I gave a gentle Anodyne to be repeated as Occasion should require, and once or twice I thought it necessary to blister, and to use such Medicines, as are found to be most serviceable in the *Small Pox* of the natural sort. After the Pustules are gone away, they have always been purged twice or thrice, and sometimes let Blood, which is all that has been usually done. But tho' the Practice may seem to be very easy, yet it is an Affair of such a Nature as to require the utmost Care, and I presume it will never be undertaken without the Advice of Physicians to direct a proper Method of Preparation before the Incision is made, as well as a just Regimen afterwards; to watch every Symptom, and lend Nature all proper assistance, when ever it shall be requisite. Where this is done, with Gods Blessing, it will seldom fail of being attended with happy success.

It has happen'd in one Instance or Two, That the Symptoms in the Distemper have been worse than usual; and some few, after the *Small Pox* were gone off, have been subject to other indispositions. Of all which I shall give you a particular Account.

* The first that was Inoculated, a Boy about a Year and half Old, began to be ill on the Eighth Day, and had a brisk Fever for two Days, then the Pustules began to appear, which were but few in Number, and rose very large. The Child was soon well, and continued so for about a Month, when being carryed out and kept a long Time in the Cold, he fell into a Feverish disorder accompanied with a Cough, and was

* *Thomas Thorp's Son of Halifax.*

was ill for Four or Five Days; after that time it went off, and he has ever since been in very good Health.

* The Second was a Girl two Years of Age, in a Family where they had formerly Bury'd three Children successively of the *Small Pox*, and this they fear'd might undergo the same Fate. The Fever came on about the seventh Day, and she continued very ill till the tenth, on which Day about Noon she had a strong convulsive Fit. In the Evening the *Small Pox* appear'd, and tho' she had more in Number than usual, yet she grew well as soon as they were fully come out, and has continued so ever since.

† The Eighth and Ninth were in a Family where they had four Children, none of whom had had the *Small Pox*. I was call'd to the Eldest, who was seized in the natural way with the most malignant Sort I ever saw, attended with the worst Symptoms that cou'd be, insomuch that he died on the fourth Day, all full of purple and livid spots. The Parents were very desirous, that any means might be used to preserve the rest; but here I was in great doubt and perplexity what part to act. I knew very well, That if I shou'd venture to make the Infision, whatever shou'd happen wou'd be charged upon that, and it was not improbable, but some of them might have already taken the Infecion, in which Case it was uncertain what the event might be. On the other Hand, if it was omitted, I did very much fear they might all Dye, such instances having been known, and the Contagion which was got amongst them, being of such a destructive

* *Fer. Turner's Daughter.*

† *Mr. John Symson's Children.*

structive Nature. Wherefore I was willing to run the
 risque of my Reputation, rather than that the Child-
 ren shou'd all perish. They were therefore all three
 inoculated the Day before the eldest died, af-
 ter having told the Parents that I cou'd not answer
 for the Success, in Case they had already catch'd the
 Infection, which would be known if any of them
 fell ill before the Seventh Day. According as we fear'd,
 one of them began on the second Day, much after
 the same Manner with the Eldest, and the *Small Pox*
 appear'd on the third Day, or rather an universal
 redness all over the Skin, interspersed with many pur-
 ple spots. There were none of these spots near the
 Places of Infection, which began to swell a little, as
 usual about the fourth Day, and the *Small Pox* did
 rise a little more about those Places than elsewhere;
 but Nature was too far oppress'd with the violence
 of the Distemper, and tho' this Girl continued longer
 than her Brother, and was not delirious as he was,
 yet she died on the seventh Day. I did not reckon
 this Child in the Number of those who received the
 Distemper by Inoculation; for I thought there was
 sufficient Reason to conclude, that she had taken the
 Infection before; but of this I must leave you to
 judge as you please, I only give you a Relation of
 Facts. The other two continued well till the eighth
 Day, when they both fell ill together. The *Small Pox*
 came out on the tenth, of a very good Sort, tho'
 more in Number than some others had, and they
 both got very easily thro' the Distemper without any
 Indisposition since. It was observable, that the Elder
 of these Children, about the time of the Eruption,
 had many Spots appear'd on him of a deep red Co-
 lour, very much like those of the other two Children,
 which changed in them to Purples afterwards, which
 the

the Mother was very much concern'd at, fearing they wou'd prove the same in this; but when the *Small Pox* came out, these Spots grew gradually less, and at last quite disappear'd. The other Child had been very subject to Convulsions for a long Time, when very young, and it was afflicted with the same very much, from the Time that the Fever came on, till the *Small Pox* appear'd.

* The Twenty Seventh was a marry'd Gentlewoman aged about Twenty Six; who got very well thro' the Distemper; but about a Week after was seized with a very great Coldness and Shivering, which were followed by a burning Heat, with a great Pain and Disorder in her Head, which continued for several Hours. She had some time ago an intermitting Fever, which I took this to be a Paroxysm of, and expected its return; but she felt no more of it, and has ever since continued in good Health.

Of her two Sons, who were both inoculated at the same Time, the Younger got thro' the Distemper with a great deal of ease, the *Small Pox* being few, and the Symptoms very slight; but the Elder a Boy about five Years old, fared quite otherwise. The Symptoms before the Eruption were more than usually severe, especially the Vomiting; the Pustules appear'd at the usual Time, but more numerous than ordinary, and when the Eruption was finish'd, the Fever did not cease, as it has done in every instance but this: on the fifth Day after he was seized, the swelling of his Face began, which was follow'd by a Pain and Swelling in his Throat, and a Salivation, which continuing till the eleventh Day, were succeeded by a
Swelling

Swelling in his Hands and Feet, the usual Symptoms of the distinct Sort when they are very full ; and tho' there appear'd some little Signs of Malignity, yet with the Use of Blisters and the milder Cordials and Alexipharmicks, the Pustules rose very large, and all Things went on very well, so that he got thro' the Distemper without any Danger, but with much more Pain and Trouble than any of the rest have endured. After the *Small Pox* were gone off, we found a hard Swelling upon his Shoulder, which disabled him for some time from moving his Arm ; but by the Use of some common Applications, that is entirely gone. In this Family the only Child they had before these, died of the *Small Pox*, of a very malignant sort, and this Boy was of an ill habit, and has had many dangerous illnesses.

* The Twenty Third, was a Girl about Nine Months old ; in this Child, after she was well of the *Small Pox*, the Mother discover'd that one of her Thighs was a little swell'd, which was painful to her for some time, and made her unwilling to move that part ; there were also some small Tumours in the Groin ; but these went off in a few Days, there only remaining a hardness about the Knee, which also disappear'd in a short Time without coming to Suppuration, and the Child is now in perfect Health.

† The Thirty Seventh was a Girl six Years of Age ; she got very easily thro' the Distemper ; but before the *Small Pox* were gone, we found a small Tumor upon the Muscles of the Loins, which ripen'd very speedily, and was open'd and heal'd up in a very short time. Her Sister, a young Woman about Eighteen

* Mr. *Jr. Hanson's* Daughter.

† Mr. *John Haigh's* Daughters.

teen had also a Swelling of the same Kind in her Leg, but it lay something deeper, and gave her a great deal of Pain for Three or Four Days; afterwards it discharged a great quantity of Matter, and was heal'd without any farther Trouble.

All the rest, excepting these I have mentioned, got very well thro' the Distemper without any manner of Trouble, or Hazard, or any ill Consequence afterward. Whether those slight Indispositions, which some have been subject to afterward, were owing to the Infusion, I have not been able to judge; but I presume what they have endured in the Course of the Distemper, and what has followed after, is not to be put in the Ballance with what is undergone in the common way, by those who are thought to come off very well; and if this Method were more generally practised, 'tis probable some means wou'd be found out, to prevent even these subsequent disorders, which are no more frequent, nor near so bad, as those which follow the natural Sort.

In two Instances the Inoculation had no effect, the Reason of which, in one, * was because the Child had the *Small Pox* before, as the Parents did believe; but the Distemper had been so favourable, as to leave it doubtful. † In the other, the Matter was taken, when the Pustules were wither'd, and almost gone, and that little moisture which they contain'd, I suppose, had lost its Virtue; the Boy to whom it was made use of, was no way affected; the Places of Incision did not at all inflame, or swell as usual, nor did any Pustules appear; but about a Month after, he was seized with

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the

* *Mich. Bland's* Daughter.

† *William Clark's* Son.

the Distemper in the ordinary way, and did very well

Some of those who have been inoculated, that are grown up, have afterwards attended others in the *Small Pox*, and it has often happen'd, that in Families where some Children have been inoculated, others have been afterwards seized in the natural way, and they have lain together in the same Bed all the Time; but we have not yet found, that ever any had the Distemper twice; neither is there any Reason to suppose it possible, there being no difference that can be observed, betwixt the Natural and Artificial Sort, (if we may be allow'd to call them so) but only that in the latter the Pustules are commonly fewer in Number, and all the rest of the Symptoms are in the same proportion more favourable. There is one Observation which I have made, tho' I wou'd not yet lay any great stress upon it, that in Families where any have been inoculated, those who have been afterwards seized, never had an ill sort of *Small Pox*, but always recovered very well.

Thus, Sir, I have given you a short and plain Account of what has occur'd to me concerning this Method of Inoculation: 'tis not any pains or care I have taken in writing this Letter, that can recommend it, for I have been solicitous about nothing but Truth, my design being only to give you a short History of the Distemper rais'd by Inoculation, so far as I have observed it. The Number might perhaps have been greater, if I wou'd have press'd it; but I only took such as desired it of themselves, being cautious of perswading any Body to it, because I had but little Authority hereabouts to support me; tho' I ought to acknowledge the kindness of many of my Friends, who being convinced, that this Method would be
of

of some use, were very zealous to promote it; and in particular that very learned and worthy Gentleman, Dr. *Richardson*, did upon all Occasions vindicate this Practice. I know not whether I shall have an opportunity of doing much more this way at present, the *Small Pox* being in a great measure gone from this Town and Countrey; but I have already seen so much of it, that I shou'd never be afraid of its successs.

There is only one Thing more I am obliged to mention, which I wou'd rather have pass'd over in silence, and that is the vigorous opposition it has met with from many honest well meaning Persons, who cou'd not but fancy, that it is an unlawful and unwarrantable Practice. They have gain'd a great Majority on their side here, at well as in other Places, where it has been practis'd. I only wish, that, as they act upon a principle of Conscience, they wou'd have been less busy in raising, or spreading false and groundless Reports, whereby this Matter has been very much misrepresented, and many, entertaining a wrong Notion of it, have been deterr'd from making use of this Method for themselves or their Children, who have since been unhappily taken off by the *Small Pox*. But when this Affair is set in a true light, and found to be always safe and effectual, I believe all the Objections rais'd against it will fall of course. It wou'd be of the greatest moment that the World shou'd know what you think of it in Town, and how you have found it to succeed; 'tis commonly objected here, that it is not approved of in *London*; but if those Gentlemen, who have justly gain'd the greatest Honour and Reputation in our Profession, shou'd by finding it successful see cause to declare publickly in its favour, that wou'd be the greatest means to

forward it in the Country, and to remove those unreasonable prejudices, which do generally prevail against a Method, which I believe has no where been put in practice with any other Aim, than to do some service to Mankind: for which Reason I doubt not but this short Narrative will be acceptable unto you from, &c.

Thomas Nettleton.

Halifax, Apr. 3.
1722.